Frequently Asked Questions — Thyroid Cancer

Overview of Thyroid Cancer, Epidemiology, Detection, Diagnosis

What is thyroid cancer?

Thyroid cancer is a disease in which cancer cells form in the thyroid gland, an organ at the base of the throat. The thyroid gland makes hormones that help control heart rate, blood pressure, body temperature, and weight.

Is there more than one type of thyroid cancer?

The main types of thyroid cancer are:

- Differentiated (including papillary, follicular and Hürthle cell)
- Medullary
- Anaplastic (an aggressive undifferentiated tumor)

Most thyroid cancers are differentiated cancers with papillary being the most common type.

How common is thyroid cancer?

The American Cancer Society estimates that 53,990 cases of thyroid cancer will be diagnosed in the United States in 2018, making it the 12th most common cancer in the United States. Thyroid cancer rates are increasing throughout the United States. From 1999-2015, the age-adjusted incidence rate of thyroid cancer increased from 6.8 per 100,000 people to 14.5 per 100,000 people.

It is unclear why thyroid cancer incidence has been increasing. One possibility is that increased screening of the thyroid gland using ultrasound may be detecting small thyroid nodules that might not otherwise have been found in the past.

Thyroid cancer is more common in females and most cases (62 percent) are diagnosed between ages 35-64 The median age at diagnosis of 51 years old.

How common is thyroid cancer in children?

Thyroid cancer is rare in children less than 10 years old. Among children 10-14 years old, there is approximately one case of thyroid cancer diagnosed per 100,000 people per year. Among 15-19-year-olds, there are approximately 3.2 cases per 100,000 people per year.

What are risk factors for thyroid cancer?

Risk factors for thyroid cancer include:

- Being between 25 and 65 years old
- Being female
- Having a family history of thyroid cancer, certain genetic diseases, or having a history of goiter
- Exposure to radiation to the head and neck

At this time, scientists continue to conduct studies of exposure to chemicals such as flame retardants, pesticides, and endocrine-disruptors, to determine if these are also risk factors for thyroid cancer.

What are signs and symptoms of thyroid cancer?

Thyroid cancer may not cause any signs or symptoms. It is sometimes found during a routine physical exam or during examination for other conditions. Signs and symptoms may occur as the tumor gets bigger. However, other conditions may cause the same signs or symptoms.

Check with your doctor if you have any of the following:

- A lump (nodule) or swelling in the neck
- Trouble breathing
- Trouble swallowing
- Pain when swallowing
- Hoarseness or other voice changes that do not go away
- A constant cough that is not due to a cold

What tests are used to diagnose thyroid cancer?

There is no recommended screening test to find thyroid cancer early. Some doctors recommend that people examine their necks twice a year to look and feel for any growths or lumps. If there is a reason to suspect thyroid cancer, your doctor may order certain tests, such as an ultrasound, an imaging study, or a biopsy, to find out.

The North Carolina Central Cancer Registry

What is a cancer registry?

A cancer registry is a systematic collection of data about cancer. Cancer registries capture a complete summary of patient history, diagnosis, stage, treatment, and status on patients diagnosed with cancer and/or benign brain/central nervous system tumors.

What is the North Carolina Central Cancer Registry and what does it do to evaluate cancers in North Carolina?

The North Carolina Central Cancer Registry (CCR) is a program within the North Carolina Department of Health and Human Services (NCDHHS). The CCR is the cancer data center for the population of North Carolina. The CCR collects, processes, and analyzes data on all cancer cases diagnosed among North Carolina residents to inform the planning and evaluation of cancer control efforts.

CCR staff respond to questions and concerns and publish facts about cancer in North Carolina. They also analyze reported cancer data to estimate the burden of cancer types in North Carolina to help focus cancer education and screening activities in areas where they are most needed and promote and conduct cancer research to find causes and cures that may save lives in the future.

What is the role of the NC CCR?

The CCR's role is to collect, process, and analyze data on all cancer cases diagnosed among North Carolina residents to inform the planning and evaluation of cancer control efforts.

The data are used by:

- State and county health departments to target resources for health education and screening services
- Researchers for investigations into the causes and treatment of cancers
- Public health advocates for focusing attention on the risk and burden of cancer
- CCR and other public health staff to educate the public and provide evaluations of geographic and behavioral risk
- The Centers for Disease Control and Prevention National Program of Cancer Registries and other national organizations that pool the data for national estimates of cancer incidence. These data submissions are also used to evaluate the quality of the CCR data.

Where does the CCR data come from?

North Carolina state law (as in nearly all other states) requires that all health care providers report detailed information to the CCR about all cancer cases and benign brain/central nervous system tumors diagnosed in North Carolina.

Because most patients are diagnosed or treated at hospitals, all hospitals in North Carolina report eligible cancer cases to the state cancer registry as required by law. Hospitals report more than 80 percent of eligible cancer cases. The CCR supplements hospital data with reports from physician offices and treatment centers that manage cancer cases not seen in a hospital.

CCR also uses North Carolina death certificates, pathology laboratories, and other databases to help identify cancer cases not reported through physician offices or hospitals.

When does data become available for public use?

NCDHHS wants to ensure that the CCR has complete data, including the diagnosis, stage, and demographics and treatment information for as many cases as possible. Because treatment can span the course of months and years, this typically means the data collection process is not instantaneous. CCR data goes through an extensive quality control process before being released to the public. Information about diagnoses is usually available 12 months after the end of the diagnosis year. Physicians must have time to complete the diagnostic work-up to determine the extent of the disease and develop a plan of action for treating the cancer. Full information including demographics and treatment is usually available 24 months after the end of the diagnosis year.

Does the NCDHHS or local health departments monitor data to identify cancer clusters?

NCDHHS annually monitors data to identify significantly elevated rates of the most common cancers (e.g., lung/bronchus, female breast, prostate, colorectal) at the county level. For other types of cancer, NCDHHS completes cancer cluster investigations when a concern is brought to its attention by physicians, hospitals, concerned citizens, or local health departments. When concerns are reported, NCDHHS and local health departments partner with community members and researchers to provide available data and investigate concerns further.

Clusters

What is a Cancer Cluster?

The U.S. Centers for Disease Control and Prevention (CDC) and the National Cancer Institute (NCI) define a cancer cluster as a "greater-than-expected number of cancer cases that occurs within a group of people in a defined geographic area over a period of time."

A cancer cluster may be suspected when people report that several family members, friends, neighbors, or coworkers have been diagnosed with the same or related types of cancer in a certain community. Most suspected cancer clusters turn out, on detailed investigation, not to be true cancer clusters. That is, no cause can be identified, and the clustering of cases turns out to be due to other factors such as changes in the population, increased screening, or a random occurrence.

Cancer is a group of more than 100 different diseases. Each type of cancer has its own risk factors and causes, which is why true cancer clusters very rarely involve more than one type of cancer. For it to be considered a true cluster, it usually must have one of the following characteristics:

- There are several cases of a rare type of cancer
- There are larger than expected numbers of a more common type of cancer
- It is a type of cancer that is not usually seen in a certain group of people (for example, children getting a cancer usually seen in adults)

If the excess cancer cases include many different types of cancer over a period of many years, it's not likely to be a true cancer cluster. And it's very unlikely to be caused by a single environmental factor or exposure.

It's also important to remember that cancer is common. Millions of new cases are diagnosed every year. Nearly one-third of all people in the United States will develop cancer during their lifetimes.

Statistics can usually help identify excess numbers of cancer cases in a specific area but if the excess number of cases reported looks significant based on statistics, it does not mean that the cancer is caused by something unique to that area.

How are suspected cancer clusters investigated?

Health departments use established criteria to investigate reports of cancer clusters. NCDHHS follows guidance from the CDC to investigate suspected cancer clusters (https://www.cdc.gov/mmwr/preview/mmwrhtml/rr6208a1.htm).

In accordance with these guidelines, NCDHHS:

- Gathers information from the person reporting a concern including the type(s) of cancer, number of cases, age and gender of the people with cancer, and the area and time period over which the cancers were diagnosed. To proceed, the cancers should either be all of the same type or types of cancer that are known to have the same cause.
- If the information suggests the need for further evaluation, the CCR conducts an analysis to determine if there is an excess of cancer in the area. This analysis can require verifying diagnoses and addresses, following up with hospitals to make sure cases are reported, and obtaining the correct population information.
- If an excess of cancer cases is observed, investigators determine the feasibility of gathering more information to determine if cases are occurring among a specific group of people (e.g., age, gender, race/ethnicity), clustered in time and space, have a common exposure or risk factors in common, and if a study can be done. Sometimes, even if there is a clear excess of cancer cases, it is not possible to conduct a study or no common exposure or link is found.

Is there a thyroid cancer cluster in Iredell County?

At this time, NCDHHS does not have enough information to know if there is a thyroid cancer cluster in Iredell county. At the request of the Iredell County Health Department, NCDHHS examined CCR data about thyroid cancer and determined that more thyroid cancer cases than expected were observed in the county and specifically, in two ZIP codes (28115 and 28117). The CCR data also showed that the rate of thyroid cancer in Iredell County was similar to the state rate during 1997-2006, but has increased faster than the state rate beginning in 2007. However, more information about who is developing cancer, when they were diagnosed, and where they have lived over time is required before confirming the presence of a cluster.

What is being done to investigate thyroid cancer in Iredell County?

Based on the results of this analysis and community concerns, NCDHHS and Iredell County Health Department are taking the following steps to investigate further.

- In June, the agencies met with a community member who has brought attention to thyroid cancer concerns in the county and a research scientist from Duke University who is looking into the feasibility of a research study. During this meeting the report findings and next steps were discussed.
- Both agencies have initiated an additional review of data from the CCR to understand how rates of thyroid cancer in the county have changed over time and who is developing thyroid cancer. This review is currently underway.
- NCDHHS is following-up with hospitals and clinicians in the area to confirm that all cases of thyroid cancer are being reported to the CCR.
- Both agencies are working with the Duke University research team to learn more about who is developing cancer, when they are being diagnosed, where they have lived over time, and if common risk factors or exposures exist.
- Both agencies are coordinating plans for public communication (e.g., press releases, community meetings) and involvement in the investigation process as more information becomes available.

When will the investigation be completed?

Investigations of possible cancer clusters are not easy and can take many months to complete. NCDHHS cannot provide a specific date when this investigation will be completed. However, NCDHHS and investigation partners will share information with the community as it moves through the investigation.

What can I do?

How can I reduce my risk of thyroid cancer?

To lower the risk of thyroid cancer, avoid unnecessary exposure to radiation, including radiation from medical imaging procedures, especially in young children, and especially around the head and neck. More information about radiation from medical imaging procedures is available on the CDC's website: https://www.cdc.gov/nceh/radiation/ionizing.htm.

What if I am concerned about my risk for thyroid cancer?

If you have concerns about your thyroid or developing thyroid cancer, you should discuss these concerns with your medical provider. There are no public health recommendations for residents to be screened for thyroid cancer.

Should I use a water purifier, filter, or have my drinking water tested?

At this time, NCDHHS has not identified an environmental exposure related to thyroid cancer risk. Therefore, NCDHHS does not recommend using water purifiers or filters to reduce your risk of thyroid cancer. In addition, there is no recommendation to test your drinking water for a specific contaminant related to thyroid cancer risk.

Is it safe to swim in Lake Norman?

At this time, NCDHHS has not identified an environmental exposure related to thyroid cancer risk. Therefore, there are no recreational water advisories for Lake Norman or any other body of water in the area.

Where can I find more information about thyroid cancer and cancer clusters?

More information about thyroid cancer can be found on the following web sites:

National Cancer Institute:
https://www.cancer.gov/types/thyroid

Centers for Disease Control and Prevention:
https://www.cdc.gov/cancer/thyroid/index.htm

American Cancer Society:
https://www.cancer.org/cancer/thyroid-cancer.html
https://www.cancer.org/cancer/cancer-causes/general-info/cancer-clusters.html

Where can I find more information about cancer statistics and prevention efforts in North Carolina?

North Carolina Central Cancer Registry:
https://schs.dph.ncdhhs.gov/units/ccr/

Reducing the Burden of Cancer in North Carolina: A Data and Resource Guide for Communities to Fight Cancer
https://publichealth.nc.gov/chronicdiseaseandinjury/cancerpreventionandcontrol/docs/ReducingtheBurdenofCancerResourceGuide.pdf

For questions about the public health investigation, contact the Iredell County Health Department at (704)-878-5300, or the Occupational and Environmental Epidemiology Branch at NCDHHS at (919) 707-5900.

For questions about the NC CCR, contact the State Center for Health Statistics at (919) 715-7289.